1 What is claimed is:

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3 1. A method for executing a work flow in a WFMS having at

4 least one process instance executing an original

5 process definition, and migrating the said instance to

6 a changed definition, said method comprising the

7 following steps:

8 a) checking each process instance during the execution

9 of the original process definition whether the

10 process instance meets a migration condition; and

11 b) migrating each process instance during the

12 execution of the original process definition to a

13 modified process definition if the migration

14 condition is met.

15

16 2. A method according to claim 1, wherein checking each

17 process instance further comprises the following steps:

18 - defining a set of worst case migration points

19 (WMP), and

20 - migrating the process instance to the modified

21 process definition, if its execution has not gone

22 beyond anyone of said worst case migration points

23 (WMP).

24

25 3. A method according to claim 2, said step of defining a

26 set of worst case migration points (WMP) comprises one

27 of the following actions:

28 - reading a set of worst case migration points (WMP)

29 from an user input, or

30 - computing a set of worst case migration points (WMP)

31 based upon the original process definition and the

32 modified process definition.

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1   4. A method according to claim 3, said step of computing a

2   set of worst case migration points (WMP) comprises the

3   following steps:

4   - defining a set D including all nodes that are changed

5   in the modified process definition with respect to

6   the original process definition;

7   - determining a set P including all predecessor nodes

8   for all nodes belonging to set D;

9   - determining a reachability matrix $R=(r_{ij})$ for all

10   nodes belonging to set P, each row and column in the

11   reachability matrix R representing a node in the

12   order listed in P, wherein a node X representing a

13   column is regarded as reachable from a another node Y

14   representing a row, if there exists a path of arcs

15   forward from X to Y; and

16   - determining the set of worst case migration points

17   from the reachability matrix R.

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19   5. A method according to claim 4, wherein the step of

20   determining the reachability matrix $R=(r_{ij})$ further

21   comprises the following actions:

22   - attributing a value of x to each reachability

23   matrix element r_{ij} if the predecessor node

24   corresponding to said column j is reachable from

25   the node corresponding to said row i;

26   - attributing a value of x to each reachability

27   matrix element r_{zz}; and

28   - attributing a value of y to each reachability

29   matrix element r_{ij} if the predecessor node

30   corresponding to said column j is not reachable

31   from the node corresponding to said row i.

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1 6. A method according to claim 5, wherein the worst case

2   migration points are determined by selecting those

3   predecessor nodes for which the elements r_{ij} from the

4   corresponding column add to a value of x.

5

6 7. A method according to claim 6, wherein a value of 1 is

7   chosen for x and a value of 0 is chosen for y.

8

9 8. A method according to claim 1, wherein said step of

10   checking each process instance during the execution of

11   the original process definition whether it meets a

12   migration condition further comprises of steps for

13   checking whether the node(s) in the original process

14   definition being currently executed is/are also present

15   in the modified process definition.

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17 9. A method according to claim 8, wherein the step of

18   checking whether a node in the original process

19   definition being currently executed is also present in

20   the modified process definition is repeated upon

21   executing of each node(s) of the original process

22   definition until the migration of said process instance

23   is completed.

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25 10. A method for creating a process definition to be

26   executed by a WFMS comprising the following steps:

27   a) defining an original process definition to be

28   executed in a work flow system;

29   b) starting execution of the process instance as per

30   the original process definition ;

31   c) defining a modified process definition;

32   d) checking for each process instance whether a

33   migration condition is met; and

1   e) replacing the nodes of the original process
2   definition in a running process instance satisfying
3   the migration condition by the corresponding nodes
4   of the modified process definition.